

**ABSTRACT:**

An apparatus for carrying out a multi-step process of converting hydrocarbon fuel to a substantially pure hydrogen gas feed includes a plurality of modules arranged in a nested manner along a common axis. The multi-step process includes: providing a fuel processor having a plurality of modules arranged so that they are nested one within the other; and feeding the hydrocarbon fuel successively through each of the modules in the reactor to produce the hydrogen rich gas.

1  
2  
3  
4  
5  
6  
7